

PATENT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Inventor: Birnbaum, et al.	)	Confirmation No.: 7576
	)	
	)	Customer No.: 000043471
U.S. Serial No.: 09/980,744	)	
	)	Art Unit: 2194
Filed: November 15, 2001	)	
	)	Examiner: Price, Nathan E.
	)	
Title: SOFTWARE ARCHITECTURE FOR A TELEVISION SET-TOP TERMINAL PROVIDING COMPATIBILITY WITH MULTIPLE OPERATING ENVIRONMENTS		

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REMARKS FOR PRE-APPEAL BRIEF REQUEST FOR INTERVIEW**

Dear Sir:

Applicants respectfully submit that the Examiner's rejections include clear errors because one or more limitations are not met by the cited reference.

**I. Rejection under 35 U.S.C. § 102(b)**

Claims 1-30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Thrift et al. ("JTV – Java-enabled Television", published February 1998) (Thrift).

Applicants respectfully disagree.

Thrift discloses a general overview of the capabilities provided by the JTV API. The JTV API defines an extension of Java and the Java Media Framework for TV-centric devices and services. (Thrift, Abstract) The JTV API is included in a software

configuration as shown in FIG. 1. Above the set-top or TV hardware, there is a TV-oriented RTOS (Real Time Operating System) for which various device drivers and a Java Virtual Machine have been implemented. (See Thrift, Section 2, first full paragraph, lines 1-2)

The Examiner's attention is directed to the fact that Thrift fails to disclose: "said fourth layer also including a kernel abstraction function which, together with said third layer, enables said core system software to operate in different operating environments," as recited in independent claims 1 and 16. Specifically independent claims 1 and 16 recite:

1. An apparatus for providing a software architecture for implementing a television subscriber terminal, comprising:
  - a computer readable medium having computer program code means; and
  - means for executing said computer program code means to implement a layered software architecture including:
    - a first layer supporting hardware of the terminal;
    - a second layer comprising at least one device driver;
    - a third layer comprising an interface for the at least one device driver;
    - a fourth layer comprising core system software for providing television functions;
    - said fourth layer also including a kernel abstraction function which, together with said third layer, enables said core system software to operate in different operating environments;
    - a fifth layer for middleware porting;
    - an operating system kernel at said fourth and fifth layers; and
    - a sixth layer providing middleware to interface with at least one application program. (emphasis added)
  
16. A method for providing a software architecture for implementing a television subscriber terminal, comprising the steps of:
  - providing a computer readable medium having computer program code means;
  - and
  - executing said computer program code means to implement a layered software architecture including:
    - a first layer supporting hardware of the terminal;
    - a second layer comprising at least one device driver;
    - a third layer comprising an interface for the at least one device driver;
    - a fourth layer comprising core system software for providing television functions;

said fourth layer also including a kernel abstraction function which, together with said third layer, enables said core system software to operate in different operating environments;

a fifth layer for middleware porting;  
an operating system kernel at said fourth and fifth layers; and  
a sixth layer providing middleware to interface with at least one application program. (emphasis added)

The present invention discloses a method and apparatus for providing a software architecture that enables core software of a set-top device to operate in any of a plurality of different operating environments. In a particular embodiment, an apparatus for providing a software architecture for implementing a television subscriber terminal includes a computer readable medium having computer program code means, and means for executing the computer program code means to implement a layered software architecture. The architecture includes: a first, hardware layer, a second, device driver layer, a third, device driver interface layer, a fourth layer with the core system software for providing television functions, and a kernel abstraction function, a fifth layer for middleware porting, and a sixth layer providing middleware to interface with at least one application program (at a seventh layer). The kernel abstraction layer and the device driver interface layer enable the core system software to operate in different operating environments. Moreover, an operating system (OS) kernel is provided at the fourth and fifth layers. The architecture further includes a software interface between the core system software and the fifth layer that enables the core system software to operate in the different operating environments. (See Application, Summary of the Invention)

In one embodiment, the television functions of the core system software include one or more of: message reception and distribution, system information processing, terminal configuration, terminal control message processing, service acquisition,

conditional access control, download capability, return path communication, and diagnostic data management. Moreover, in one embodiment, the television functions may include conditional access services, including one or more of: object authentication, object authorization, resource authorization, baseline privacy key exchange services, and cryptographic functions. (See Application, Summary of the Invention)

A prima facie case of anticipation requires a showing of each claim element as set forth in the claim. Applicants respectfully submit that a prima facie case of anticipation has not been proven.

As stated in Applicants' previous Response, Thrift only discloses three actual layers (not including the application layer) (See Thrift, Fig. 1). The present invention discloses six layers (not including the application layer). In particular, Thrift does not disclose "a third layer comprising an interface for the at least one device driver", as claimed. The Examiner cites Thrift, Section 2, first full paragraph, lines 1-3 (which does not describe an interface layer) stating that "there must be an interface to allow the JVM to use the hardware". The cited passage of Thrift clearly fails to support the Examiner's assertion. As such, Applicants assert that Thrift does not teach, disclose, or suggest a layer "comprising an interface for the at least one device driver".

In addition and as stated in Applicants' previous Response, Thrift is devoid of the notion of operating in different operating environments. Thrift clearly discloses only a TV-oriented RTOS (Real-Time Operating System). The Examiner states that hardware independence is an integral part of the design of Java and Java Virtual Machines. However, Thrift clearly limits and teaches away from the "hardware independence" features of Java by teaching a JTV API that is designed specifically for TV-oriented

RTOS. As such, the concept of “including a kernel abstraction function which, together with said third layer, enables said core system software to operate in different operating environments” is clearly not taught, suggested, disclosed, or contemplated by Thrift.

In view of the above arguments, Applicants submit that independent claims 1 and 16 are patentable over Thrift. Claims 2-15 and 17-30 are patentable at least by virtue of depending from their respective base claim. Applicants respectfully request withdrawal of the rejection.

Date: October 3, 2006

Respectfully submitted,

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<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		Docket Number (Optional) <b>D02288</b>
	Application Number <b>09/980744</b>	Filed <b>11/15/2001</b>
	First Named Inventor <b>Birnbaum</b>	
	Art Unit <b>2194</b>	Examiner <b>Price, Nathan E.</b>
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheets(s).  Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <input type="checkbox"/> applicant inventor. </div> <div style="width: 50%; text-align: right;"> <u>/Thomas Bethea, Jr./</u>  Signature </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <input type="checkbox"/> assignee of record of the entire interest.  See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  (Form PTO/SB/96) </div> <div style="width: 50%; text-align: right;"> <u>Thomas Bethea, Jr.</u>  Typed or printed name </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <input type="checkbox"/> attorney or agent of record.  Registraton number _____ </div> <div style="width: 50%; text-align: right;"> <u>215-323-1850</u>  Telephone number </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <input checked="" type="checkbox"/> attorney or agent acting under 37 CFR 1.34.  Registration number if acting under 37 CFR 1.34: <u>53,987</u> </div> <div style="width: 50%; text-align: right;"> <u>October 4, 2006</u>  Date </div> </div> <p style="margin-top: 20px;">NOTE: Signatures of all the inventors or assignees or record of the entire interest or their representative(s) are required.  Submit multiple forms if more than one signature is required, se below*</p>		
<input checked="" type="checkbox"/> *Total of <u>1</u> forms are submitted.		